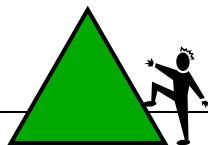

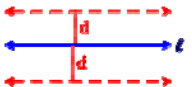
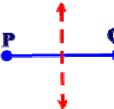
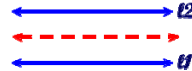
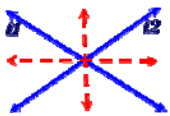
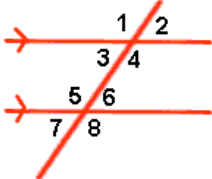
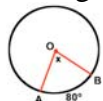
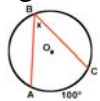
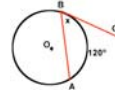
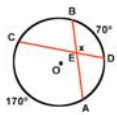
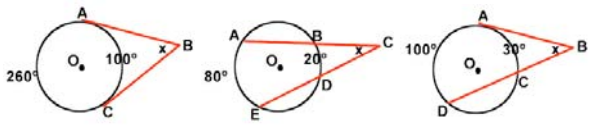


Geometry – Things to Remember!



3-D Figures: Prism: $V = Bh$ Pyramid: $V = \frac{1}{3} Bh$ Cylinder: $V = \pi r^2 h$; $SA = 2\pi rh + 2\pi r^2$ Cone: $V = \frac{1}{3} \pi r^2 h$; $SA = s\pi r + \pi r^2$ Sphere: $V = \frac{4}{3} \pi r^3$; $SA = 4\pi r^2 = \pi d^2$	Regular Solids: Tetrahedron – 4 faces Cube – 6 faces Octahedron – 8 faces Dodecahedron – 12 faces Icosahedron – 20 faces	Locus Theorems: Fixed distance from point.  Fixed distance from a line.  Equidistant from 2 points.  Equidistant 2 parallel lines.  Equidistant from 2 intersecting lines. 
Polygon Interior/Exterior Angles: Sum of int. angles = $180(n - 2)$ Each int. angle (regular) = $\frac{180(n - 2)}{n}$ Sum of ext. angles = 360 Each ext. angle (regular) = $\frac{360}{n}$	Triangles: By Sides: Scalene – no congruent sides Isosceles – 2 congruent sides Equilateral – 3 congruent sides By Angles: Acute – all acute angles Right – one right angle Obtuse – one obtuse angle Equiangular – 3 congruent angles(60°) Equilateral ↔ Equiangular Exterior angle of a triangle equals the sum of the 2 non-adjacent interior angles. Mid-segment of a triangle is parallel to the third side and half the length of the third side.	Congruent Triangles SSS SAS ASA AAS HL (right triangles only) NO donkey theorem (SSA or ASS) CPCTC (use after the triangles are congruent)
Related Conditionals: Converse: switch if and then Inverse: negate if and then Contrapositive: inverse of the converse (contrapositive has the same truth value as the original statement)		Inequalities: --Sum of the lengths of any two sides of a triangle is greater than the length of the third side. --Longest side of a triangle is opposite the largest angle. --Exterior angle of a triangle is greater than either of the two non-adjacent interior angles.
Pythagorean Theorem: $c^2 = a^2 + b^2$ Converse: If the sides of a triangle satisfy $c^2 = a^2 + b^2$ then the triangle is a right triangle.	Similar Triangles: AA SSS for similarity SAS for similarity Corresponding sides of similar triangles are in proportion.	Mean Proportional in Right Triangle: Altitude Rule: $\frac{\text{part of hyp}}{\text{altitude}} = \frac{\text{altitude}}{\text{other part hyp}}$ Leg Rule: $\frac{\text{hypotenuse}}{\text{leg}} = \frac{\text{leg}}{\text{projection}}$

<p>Parallels: If lines are parallel ...</p>  <p>Corresponding angles are equal. $m\angle 1=m\angle 5$, $m\angle 2=m\angle 6$, $m\angle 3=m\angle 7$, $m\angle 4=m\angle 8$</p> <p>Alternate Interior angles are equal. $m\angle 3=m\angle 6$, $m\angle 4=m\angle 5$</p> <p>Alternate Exterior angles are equal. $m\angle 1=m\angle 8$, $m\angle 2=m\angle 7$</p> <p>Same side interior angles are supp. $m\angle 3+m\angle 5=180$, $m\angle 4+m\angle 6=180$</p>	<p>Quadrilaterals:</p> <p>Parallelogram: opp sides parallel opp sides = opp angles = consec. angles supp diag bis each other</p> <p>Rectangle: add 4 rt angles, diag. =</p> <p>Rhombus: add 4 = sides, diag. perp, diag bisect angles.</p> <p>Square: All from above.</p> <p>Trapezoid: Only one set parallel sides.</p> <p>Median of trap is parallel to both bases and = $\frac{1}{2}$ sum bases.:</p> <p>Isosceles Trap: legs = base angles = diagonals = opp angles supp</p>	<p>Transformations:</p> <p>$r_{x,-y}(x,y) = (x,-y)$ $r_{-x,y}(x,y) = (-x,y)$ $r_{y,x}(x,y) = (y,x)$ $r_{-y,-x}(x,y) = (-y,-x)$ $r_{opp}(x,y) = (-x,-y)$</p> <p>$T_{a,b}(x,y) = (x+a,y+b)$ $D_k(x,y) = (kx,ky)$ $R_{90^{\circ}}(x,y) = (-y,x)$ $R_{180^{\circ}}(x,y) = (-x,-y)$ $R_{270^{\circ}}(x,y) = (y,-x)$</p> <p>Glide reflection is composition of a reflection and a translation.</p> <p>Isometry – keeps length.</p> <p>Orientation – label order</p>
<p>Circle Segments In a circle, a radius perpendicular to a chord bisects the chord.</p> <p>Intersecting Chords Rule: (segment part)•(segment part) = (segment part)•(segment part)</p> <p>Secant-Secant Rule: (whole secant)•(external part) = (whole secant)•(external part)</p> <p>Secant-Tangent Rule: (whole secant)•(external part) = (tangent)²</p> <p>Hat Rule: Two tangents are equal.</p>	<p>Circle Angles:</p> <p>Central angle = arc</p>  <p>Inscribed angle = half arc</p>  <p>Angle by tangent/chord = half arc</p>  <p>Angle formed by 2 chords = half the sum of arcs</p>  <p>Angle formed by 2 tangents, or 2 secants, or a tangent/secant = half the difference of arcs</p> 	
<p>Slopes and Equations:</p> $m = \frac{\text{vertical change}}{\text{horizontal change}} = \frac{y_2 - y_1}{x_2 - x_1}$ <p>$y = mx + b$ slope-intercept</p> <p>$y - y_1 = m(x - x_1)$ point-slope</p>	<p>Coordinate Geometry Formulas:</p> <p>Distance Formula:</p> $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ <p>Midpoint Formula:</p> $(x,y) = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$	<p>Circles:</p> <p>Equation of circle center at origin: $x^2 + y^2 = r^2$ where r is the radius.</p> <p>Equation of circle not at origin: $(x - h)^2 + (y - k)^2 = r^2$ where (h,k) is the center and r is the radius.</p>